

THAT WHICH IS CLAIMED IS:

1. An electroscope system based on exciting a certain area of the surface of a sample to emit electrons with a characteristic distribution of kinetic energies, comprising a spherical capacitor energy analyzer, decelerating and focusing means of electrons emitted from the excited area of the sample for producing a spectrum representatives of the distribution of the kinetic energies of the emitted electrons over an inlet aperture of said energy analyzer, a detector for detecting the electrons traveling through the energy analyzer for reproducing the distribution of the kinetic energies of the emitted electrons along at least a direction orthogonal to the radial direction of said spherical capacitor of the analyzer, characterized in that the area of said sample is excited by an electron beam produced by a filed emission source and by a monochromator energy filter of said electron beam disposed long stream of said electron source.

2. The spectroscopy system according to claim 1, wherein said monochromator energy filter reduces energy dispersion of the electrons of said electron beam to less than 0.2 eV.